

**Algebra II Pre-AP/GT
Assignment Sheet March 19 through March 23**

Date	Topic	Assignment
Monday 3/19	Rational Word Problems (Work and Motion)	Worksheet
Tuesday 3/20	Rational Word Problems (Mixture and Rate)	Worksheet
Wednesday 3/21	Rational Word Problems (Extra Practice)	Worksheet
Thursday 3/22	Review of Polynomial, Rational and Quadratic Inequalities	Worksheet
Friday 3/23	Review for BIG QUIZ	No joke, you will have homework ☺
Monday 3/26	Big Quiz on Rational Word Problems and Inequalities	No joke, you will have homework ☺

Monday, March 19

Work and Motion

**(a) Identify the variable(s) (b) write the equation(s) (c) Write the answer in a complete sentence.
Leave answers exact.**

Work Problems:

1. An old conveyor belt takes 21 hours to move one day's coal output from the rail line. A new belt can do it in 15 hours. How long does it take when both are used at the same time?
2. Joe and Bill can retila a roof in 10 hours. Working alone, Joe could do the job 4.5 hours faster than Bill. How long would each man need to do the job alone?
3. A vat can be filled by the hot-water faucet in 8 minutes and by the cold-water faucet in 6 minutes. It can be emptied through the drain in 4 minutes. If the drain is accidentally left open while both faucets are turned on, how long does it take to fill the vat?

Motion Problems:

4. Pam jogged up a hill at 6 km./hr and then jogged back down the hill at 10 km./hr. How many kilometers did she travel in all if her total jogging time was 1 hour and 20 minutes?
5. Sharon drove for a part of a 150 km. trip at 45 km./hr and the rest of the trip at 75 km./hr. How far did she drive at each speed if the entire trip took her 2 hours and 40 minutes?
6. A passenger boat travels 35 km upstream and then back again in 4 h 48 min. If the speed of the boat in still water is 15 km/h, what is the speed of the current?

Mixed Problems:

7. Phil is making a 40-kilometer canoe trip. If he travels at 30 kilometers per hour for the first 10 kilometers, and then at 15 kilometers per hour for the rest of the trip, how many minutes longer will it take him than if he makes the entire trip at 20 kilometers per hour?
8. Julien can mulch a garden in 20 minutes. Together, Julien and Remy can mulch the same garden in 11 minutes. How long will it take Remy to mulch the garden when working alone?
10. Kyle paddled his kayak 12 km upstream against a 3 km/h current and back again in 5h 20 min. In that time how far could he have paddled in still water?
11. A glassblower can produce a set of simple glasses in about 2 h. When the glassblower works with an apprentice, the job takes about 1.5 h. How long would it take the apprentice to make a set of glasses when working alone?
12. To measure the speed of the jet stream, a weather plane left its base at noon and flew 800 km directly against the stream with an air speed of 750 km/h. It then returned directly to its base, arriving at 2:24 p.m. What was the speed of the jet stream?
13. Mr. Perry likes to take a leisurely walk at 3 mph and return home over the same route by bus at 12 mph. If he spends 12.5 hours for the entire trip, find the greatest distance he can walk.
- *14. At 10:00 A.M. pipe A began to fill an empty storage tank. At noon, pipe A malfunctioned and was closed. Pipe B was used to finish filling the tank. If pipe A needs 6 hours to fill the tank alone and pipe B needs 8 hours, at what time was the tank full?